
VIA E-MAIL

January 16, 2007

Dr. Karl E. Longley
Acting Chairman
Regional Water Quality Control Board, Central Valley Region
11020 Sun Center Drive, Suite #200
Rancho Cordova, California 95670

Re: Written Comments on *Tentative Waste Discharge Requirements General Order for Existing Milk Cow Dairies*

Dear Dr. Longley:

On behalf of the Community Alliance for Responsible Environmental Stewardship (CARES) and its member organizations, we thank you for the opportunity to provide comments to the Regional Board on this very important proposed tentative general order. CARES coalition members represent virtually 100 percent of the California dairy industry, and include the three main dairy producer membership organizations (***Western United Dairymen, California Dairy Campaign*** and ***Milk Producers Council***) as well as the state's major producer-owned milk processing cooperatives and private companies manufacturing and marketing dairy products, and additional associations such as the ***Alliance of Western Milk Producers*** and the ***Dairy Institute of California***. It is the goal of our CARES coalition to assist your staff and Board by providing uniform, consistent and technically supportable information and feedback on behalf of the many diverse groups that make up our large dairy industry in California.

As you know, the CARES coalition made extensive comments at your December 7 meeting. We have engaged technical, legal and other appropriate experts throughout this process, as well as diligently working with your staff and our coalition organizations to identify and address the critical environmental, legal, logistical and economic issues raised by this tentative order. While we do not believe the Regional Board or our group yet has a complete understanding of these issues, we remain committed to being actively engaged and moving forward with this process to develop and adopt a General Order for existing dairies that is practical, efficient and cost-effective.

The comments contained in this submittal are a result of careful review of the proposed tentative order by our member organizations, our legal team at Stoel Rives LLP, and the Provost & Pritchard Engineering Group, Inc., which specializes in many of the

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engineering issues discussed in the order and has long experience in environmental engineering issues related to dairies. In addition, we have contracted professional experts with practical experience in managing organic crop nutrients such as dairy manure, such as Dellavalle Laboratory Inc. In short, we have made every effort in the time allotted to bring appropriate expertise to bear to ensure a productive discussion. Due to the size and complexity of the order (more than 121 pages organized in 13 separate sections), it should come as no surprise that our team identified numerous areas where technical changes and corrections are in order, and others where extensive clarification is necessary. Our initial review has led to attached technical and legal comments. However, in this cover letter we would also like to summarize six key points.

**Summary of key points**

1. **Our coalition organizations are committed to the same goal as your Board: Protection of water quality. However, we believe it is necessary to consider the most practical, efficient and cost-effective methods for reaching these goals.** Every one of our member groups has repeatedly noted that the dairy industry's future depends on protection of our water quality. Our comments are intended as a good faith effort to protect both our water quality and the economic sustainability of California dairies, and to reach an appropriate balance and cost-effectiveness. None of our comments should be construed as an attempt to delay or avoid appropriate regulation.

2. **In its present form, the tentative General Order is overly complex and will likely be difficult for producers to understand and implement.** It is noteworthy that the CARES technical team reviewing the order, which includes experienced environmental attorneys, engineers and other expert consultants, often arrived at differing interpretations of the same language or expressed need for significant clarification. Meanwhile, our coalition organizations have expressed grave concerns about the ability of individual dairy producers to understand and implement the order. CARES member organizations strongly believe that measures should be taken to simplify and clarify the General Order. We have included some suggestions here for accomplishing this and believe that additional measures could be identified if the Regional Board follows our recommendations to prepare a more thorough analysis of the order as outlined below.

3. **In its present form, the tentative General Order is too costly; there is opportunity to significantly reduce costs while still improving dairy environmental performance.** An engineering analysis by Provost & Pritchard Engineering Group, Inc. has identified initial costs of approximately $90,000 per dairy, with ongoing annual costs of nearly $60,000. This level of cost will be particularly difficult for the small and medium-sized dairies to assimilate. Many of these costs are not directly related to measures that will actually reduce or mitigate environmental impacts and in fact are a result of excessive or impractical environmental monitoring and reporting measures. CARES believes these costs can be significantly reduced, perhaps by up to two-thirds or more, while still

realizing a significant improvement in dairy environmental performance. However, this will require additional work as identified below.

4. **A cost-effectiveness "test-drive" is essential before adoption of the order.** Economic analysis of the order by Regional Board staff has so far been minimal. An understanding of the economic impacts of the proposed order is both legally required (see Appendix 1) and also a critical element of sound policy for the Board adoption. Not only must the overall compliance costs be considered, but the Board should be provided with an understanding of what the various elements of the General Order will cost. CARES is actively assisting in this effort. On our own initiative and expense, we have identified dairies for individual "test drives" of the proposed order. Our intent is to go beyond hypothetical concerns and identify real, on-the-ground logistical concerns for both dairies and come up with more detailed cost estimates. In addition, we intend to use this information to identify practical, efficient and cost-effective alternatives for Regional Board consideration. We have already begun this process and expect to be able to present our findings in the next several weeks and no later than the end of February.

5. **Additional workshops are needed with staff and the Board.** As demonstrated in the attached comments, there are many areas where there is significant opportunity to streamline and improve the General Order. CARES members believe that this can be best accomplished by addressing these topics in workshops involving industry technical experts and Regional Board staff and interested stakeholders. Workshops would allow the opportunity for an iterative discussion and resolution of key issues rather than an endless and inefficient series of written comments and responses. These workshops could also be used to discuss and validate the findings of the economic analyses discussed previously, thereby assuring that major stakeholders are operating from the same basic facts during upcoming board hearings.

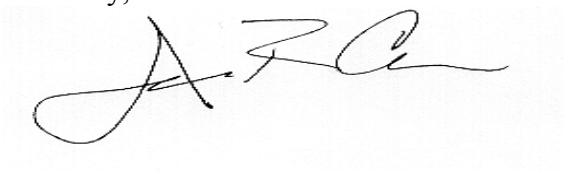
6. **The Regional Board should formally recognize that this is a "first-generation" permit and take steps to avoid unnecessarily harsh enforcement and to allow for adaptive management. The Board should consider adopting the General Order as a blueprint and compass, but leaving many of the details of nutrient management, monitoring and other dairy management aspects to the limited discretion of the Executive Officer.** This is perhaps the most important point CARES can make at this time. While we believe that several critical steps can be taken to improve the WDRs before adoption, it is unlikely and probably impossible for the adopted General Order to represent a perfect regulatory approach. This is because the proposed order in any conceivable form represents the most comprehensive regulatory scheme ever proposed for dairies, and it is simply impossible to foresee all the situations that will arise following adoption of the Order. As detailed in Appendix 1, the Board should take steps to ensure that dairy producers who are actively working in good faith toward compliance should not be treated as violators of the order and thus, subject to strict enforcement. Secondly, the Board should recognize that while the general

goals and tools (water quality protection, accountability, enforcement and environmental monitoring) described in the tentative General Order will remain the architecture of this regulation going forward, many of the specific tactics for reaching those goals may merit adaption, revision and improvement going forward. We can benefit from the learning experiences gained as the order is implemented on more than 1,500 Central Valley dairies. Therefore, it is critical that the Board allow for adjustments in the regulations post-adoption, particularly those identified in the attachments to the General Order and related to methods of achieving the goals rather than the goals themselves, such as environmental monitoring, nutrient management and reporting, and other ongoing management and reporting issues. The Regional Board should formally recognize this need at the time of adoption of the order; doing so will make it clear both to staff and the regulated community that the Board is committed to a process where the Board and the industry continue to identify and utilize solutions that work while being flexible enough to jettison methods that turn out to be either unworkable, unnecessary or inefficient. CARES recommends that the Regional Board consider, particularly during the initial years following adoption of this order, giving the Executive Officer limited authority to allow for changes in monitoring, nutrient management and other management strategies so long as the intent of the General Order is maintained.

Again, while we have made every effort to be thorough and complete in the comments contained here and in the attached appendices as well as at the public workshops in December in Fresno and Rancho Cordova, we do anticipate that our ongoing research and analysis as well as upcoming meetings with your staff will produce additional useful information.

CARES coalition members look forward to working with your Board in a prudent yet expeditious fashion to develop and put forward a sound proposed General Order for your Board's adoption that protects our environment, minimizes economic impacts for dairy families and local economies, and enjoys the broadest possible support among stakeholders.

Sincerely,



J.P. Cativiela
CARES Program Coordinator

C: Pamela Creedon, Executive Officer

Appendices listed on next page

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January 12, 2007

Ms. Pamela Creedon
Executive Officer
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**Re: Comments on Draft Waste Discharge Requirements General Order for Existing Milk Cow Dairies; Legal Issues**

Dear Ms. Creedon:

INTRODUCTION AND OVERVIEW

The Regional Water Board's mission is succinctly summarized in the Porter-Cologne Water Quality Act (Act):

> factors which may affect the quality of the water of the state shall be regulated to attain the highest water quality which is reasonable, considering all demands being made and to be made in those waters and the total values involved, beneficial and detrimental, economic and social, tangible and intangible.

(Calif. Wat. Code § 13000.)

This "balancing" mission is highlighted in the legislative history of the Act:

> The regional boards must balance environmental characteristics ... and economic considerations ..."

(Final Report of the Study Panel to the California State Water Resources Control Board, March 1969, at page 13.)

Consistent with this legislative mandate, the Regional Board must balance many considerations in its quest to achieve reasonable water quality protection: the beneficial uses of the water, environmental characteristics, water quality conditions that can be reasonably achieved, and economic considerations. (See Calif. Wat. Code §§ 13263(a) and 13241.)

In determining what are reasonable requirements for existing dairies, the following factors should be considered:

1. This is the first time most of the some 1,600 existing dairies will be directly regulated by WDRs.

2. Existing dairies have established operating and discharge systems that will be difficult and costly to retrofit.

3. Dairies operate on fixed-priced returns and cannot easily absorb additional compliance costs.

4. Monitoring costs are an ongoing, annual economic burden.

SPECIFIC LEGAL COMMENTS

1. The WDRs Should Not Require Strict and Immediate Compliance.

While some of the provisions of the WDRs purport to give dairies time to implement various measures, those provisions are belied by several provisions requiring strict and immediate compliance. These include the following:

- (a) The discharge of waste which causes or contributes to an exceedance of any applicable water quality objectives is prohibited. (Provision A.3.)

- (b) The disposal of waste shall not cause degradation of surface or groundwater. (Provision B.1.)

- (c) The discharge of waste shall not cause underlying groundwater to be degraded or to exceed water quality objectives. (Provision D.1.)

- (d) Any instance of noncompliance with this Order constitutes a violation and is grounds for enforcement action. (Provision E1.)

These WDRs should be modified to state that a discharger is in compliance if he or she is properly implementing requirements to prepare Waste Management Plans and Nutrient

Management Plans. These Plans provide for an iterative approach to compliance which is reasonable, especially for a first generation WDR. Such an approach is consistent with staff comments at the December 7, 2006 workshop that overnight compliance is not being required.

2. The Monitoring Requirements Are Overly Burdensome and Costly.

California Water Code section 13267 is clear in this regard:

> The burden, including costs, of these reports shall bear a reasonable relationship to the need for the report and the benefits to be obtained from the reports. In requiring these reports, the regional board shall provide the person with a written explanation with regard to the need for the reports, and shall identify the evidence that supports requiring that person to provide the reports.

This requirement to consider costs is underscored for programs regulating the agricultural sector:

> ... prior to the implementation of any agricultural water quality control program, an estimate of the cost of such a program, together with an identification of the potential sources of financing, shall be indicated.

(Calif. Wat. Code § 13141.)

The draft WDRs are accompanied by a 21-page monitoring program. This program requires the submittal of numerous reports and studies. The need and cost of these programs has not been articulated, as required by the Water Code. The program must be thoroughly reexamined and modified in a way to make it reasonable and practicable.

Both staff and board members commented at the workshop about the need to consider costs. Specifically, staff indicated that suggestions to reduce monitoring costs were being considered. A board member stated that there are too many costly reports and the requirements should be in "plain English." Staff indicated that a cost analysis will be prepared. It is hoped that this analysis will be used to support a reduction in the monitoring requirements contained in the present WDRs.

3. The WDRs Contain Several Prescriptive Standards That May Only Be Adopted In Regulations.

A General Permit proceeding has been construed by the State Board's Office of Chief Counsel to be a rulemaking proceeding. Accordingly it is subject to the rulemaking provisions of the State's Administrative Procedure Act (APA). (See Gov. Code § 11353(b). "Regulation" is defined to include "standard of general application." (Gov. Code § 11342(g).) Compliance with the rulemaking requirements of the APA is mandatory. (*Armistead v. State Personnel Board* (1978) 22 Cal.3d 198.) Standards of general application that have not been adopted in accordance with the APA have been labeled "underground regulations." Underground regulations are not enforceable. (Gov. Code § 11340(a).) If a rule looks like a regulation, reads like a regulation, and acts like a regulation, it will be treated by the courts as a regulation, whether or not the issuing agency so labeled it. (*State Water Board v. OAL* (1993) 12 Cal.App.4$^{th}$ 69.)

Several provisions of the draft General WDRs are clearly standards of general application.

- New or reconstructed retention ponds must have seepage rates of no greater than 1 x $10^{-6}$ cm/sec. (Provision B.7.) This standard would replace a standard that currently exists in the State Water Board's regulations. (27 C.C.R. § 22562.)

- Discharge of waste and/or stormwater from the production area is prohibited. (Provision A.1 goes beyond federal requirement that such discharges are allowed if they occur during 25-year, 24-hour storm event.)

- Specific buffer and setback requirements for land application of manure and wastewater. (Provision C.10.)

These standards, if adopted as part of the General WDRs, would clearly be underground regulations. They should be removed or adopted pursuant to the APA.

COMMENTS ON ENVIRONMENTAL GROUPS' POSITIONS

1. NPDES. Comments were made at the workshop that the General WDRs should be issued as NPDES. These comments are unfounded:

(a) The General WDRs do not purport to regulate point source discharges to waters of the United States.

(b) An NPDES permit is unnecessary for discharges that fall within the definition of agricultural stormwater. (40 CFR § 127.23(e); *Waterkeeper Alliance v. EPA* (2005) 399 F.3d 486.)

2. CEQA. The draft WDRs thoroughly explain why a categorical exemption from CEQA is applicable.

CONCLUSION

1. A provision should be added to the WDRs which explicitly states that a dairy preparing Waste Management and Nutrient Management Plans in accordance with the WDRs is in compliance with the WDRs.

2. A thorough examination of the costly monitoring requirements should be performed. In accordance with Water Code section 13267, the monitoring program should be revised or reduced to eliminate unneeded reports and monitoring.

3. Prescriptive requirements presently contained in the draft WDRs should be deleted, since they are not being adopted as a regulation under the APA.

4. Comments from interested persons regarding NPDES and CEQA should be rejected.

Given the substantial revisions that will be required to address these comments and other comments provided to the Regional Water Board, revised draft WDRs should be prepared. Such revisions should be preceded by meetings with appropriate interested persons and followed by another public workshop.

Very truly yours,

Craig M. Wilson

CMW:ms

## Appendix 2
CARES Comments on Tentative General Order WDRs

**Paragraph 7**
The "Existing Facility" definition needs to be clarified. In the Tentative General Order, in the definitions and in Polly's Lowry's portion of the staff presentation at the December 2005 workshop, an existing facility was clearly defined to the Board and consistent with Finding # 7. Polly Lowry stressed to the Board that the 8 August 2005 and the 17 October 2005 dates establish what an existing facility is. This is consistent with the definitions section in Attachment "E" of the Tentative Order. The Information Sheet and Attachment "A," however, place conditions on this definition that were never described to the Board, nor justified in the General Order, nor stated in Attachment "E" (definitions). Specifically, the confusion lies with the final two paragraphs of Page 3 of the Information Sheet and in the CEQA Compliance section of Attachment "A". CARES recommends that these sections be eliminated to be consistent with the description given by Polly Lowry to the Board at the December workshop**.**

**Paragraph 10**
- Tentative order states: *"For the purposes of this Order, existing herd size is defined as the number of mature dairy cows reported in the Report of Waste Discharge submitted in response to the 8 August 2005 letter from the Executive Officer, plus or minus 15 percent of that reported number to account for the natural variation in herd sizes."*
- CARES comment: The herd size of 15% as a normal and expected variation is correct, but is not reflected in the SPRR and in Attachment E.
- CARES recommendation: Change the SPRR and Attachment E to be consistent with the General Order, paragraph 10.

**Paragraph 13**
- Tentative order states: *"For the purposes of this Order, "waste" includes, but is not limited to, manure, leachate, process wastewater and any water, precipitation or rainfall runoff that contacts raw materials, products, or byproducts such as manure, compost piles, feed, silage, milk, or bedding."*
- CARES comment: The definition of "Waste" has included "bedding." However bedding may include such benign materials as rice hulls, straw, sand, or almond shells. Separated, dried and stockpiled manure solids or dried manure are often used as bedding, but these materials will still be considered as manure, therefore still fall under the definition of waste. Other materials, such as the examples we have provided should not be considered "waste."
- CARES recommendation: Refine the definition of "waste" as it refers to bedding by stating "*used or soiled* bedding."

**Paragraph 20f**
Tentative order states: *"(The Order prohibits ...) Discharges of storm water to surface water from the land application area where manure or process wastewater has been applied unless the land application area has been managed*

*consistent with a certified Nutrient Management Plan (see Attachment C, which is attached to and made part of this Order);"*

- CARES comment: The requirement for a "certified" NMP continues to raise questions and merits additional discussion. It remains to be adequately defined what constitutes certification and how certification will be conferred. Additional coordination with the regional board is necessary to adequately define this; we expect a severe shortage of human resources to do this job.
- CARES recommendation: Prioritize this item for further discussion and definition, and consider adding language to allow the Executive Officer to establish criteria for certification.

**Paragraph 21**

- Tentative order states: *"Groundwater monitoring shows that dairies in the Region have impacted groundwater quality. A study of five dairies in a high-risk groundwater area in the Region found that groundwater beneath dairies that were thought to have good waste management and land application practices had elevated levels of salts and nitrates beneath the production and land application areas. The Central Valley Water Board requested monitoring at 80 dairies with poor waste management practices in the Tulare Lake Basin. This monitoring has also shown groundwater pollution under many of the dairies, including where groundwater is as deep as 120 feet and in areas underlain by fine-grained sediments."*
- CARES comment: This section leaves the impression that all dairies in the region have had an adverse effect on groundwater quality, by stating that "dairies in the region have impacted groundwater quality." In fact, there is a significant amount of contradictory evidence, such as the recent GAMA study, which suggests that the cause and effect relationships between dairies and high nitrate levels are less than clear. As worded in the tentative order, this paragraph is somewhat prejudicial.
- CARES recommendation: Revise the statement to more accurately reflect the complexity of existing groundwater data and to eliminate unnecessarily prejudicial or biased statements.

**Paragraphs 21-25**

During the staff presentation at the December 2006 workshop, Rudy Schnagl spent considerable time describing the complexity of the nitrogen cycle to the Board, along with the unpredictable timing of application and availability of organic nitrogen. He also stated that the goal of the General Order was not trying to eliminate nitrogen leaching, but to reduce the amount being leached. CARES supports that concept and pledges to work with the Board to see this is accomplished. The difficulty of managing nitrogen from organic sources, however, needs to be described as part of the Findings. It should be included as part of the description of the impacts of dairies on water quality and also described in the information sheet so that future readers do not think that nitrogen management is an exact science.

**Paragraph 22**

- Tentative order states: *"No set of waste management practices has been demonstrated to be protective of groundwater quality in all circumstances."*
- CARES comment: This is a truism that can be applied to virtually any circumstance in agriculture, urban and even in natural settings. Under this logic groundwater monitoring should be required for virtually any use where water is applied to land. CARES does not agree that groundwater monitoring is presumptively in all cases the "most direct" way to determine if management practices are protective of groundwater. We recommend validation of management practices in general, as opposed to attempting to validate them individually on each facility. This creates a practical, efficient and cost-effective alternative to universal monitoring. When implemented, groundwater monitoring should result from using a risk-based approach similar to that described in Table 2 of the Tentative Order *Monitoring and Reporting Program* (however, we refer to our comments on that section related to more appropriate factors for risk analysis).
- CARES recommendation: Replace this paragraph with: "*Monitoring and Reporting Program No. ___, which is attached to and made part of this order, requires groundwater monitoring to determine if a dairy is in compliance with the groundwater limitations of this order, unless the Executive Officer determines that an alternative method of environmental monitoring is appropriate following a risk-based analysis."*

**Paragraph 23**

- Tentative order states: *"The Central Valley Water Board has documented many discharges of waste from existing milk cow dairies to surface water and has taken appropriate enforcement actions in such cases. This Order prohibits discharges of: waste and/or storm water to surface water from the production area; wastewater to surface waters from cropland; and storm water to surface water from a land application area where manure or process wastewater has been applied unless the manure has been incorporated into the soil and the land application area has been managed consistent with a certified Nutrient Management Plan. When such discharges do occur, this Order requires the Discharger to monitor these discharges.*"
- CARES comment: This paragraph appears to prohibit discharges of stormwater to surface water from a land application area used for manure or wastewater application unless the manure or wastewater has been incorporated into the soil. This is impossible in a pasture situation and needs to be corrected to remove the incorporation requirement, especially for pastures. It also goes beyond the CAFO rule requirements, and trumps the CWA section 504 stormwater exemption. A NMP should be all that is required, and even that exceeds the current CAFO rule. The current language prohibits even the discharge of clean stormwater unless incorporation took place.

- CARES recommendation: The release of clean stormwater should not be prohibited. The paragraph should be revised by removing the words *"the manure has been incorporated into the soil and."*

**Paragraph 24**

- Tentative order states: *The milk cow dairies at which this Order is directed were in existence prior to October 2005 and many were constructed several decades ago. The waste management systems at these existing dairies are commonly not capable of preventing adverse impacts on waters of the state either because of their outdated design or need for maintenance or both. Historic operation of these dairies has presumptively resulted in an adverse effect on the quality of waters of the state. Groundwater data are needed to determine the existence and magnitude of these impacts. If data document impacts, continued operation of dairies without waste management improvements will perpetuate the ongoing adverse water quality effects caused by the generation and disposal of dairy waste.*
- CARES comment: The statements in this paragraph are overly broad and paints all "milk cow dairies at which this Order is directed" with the same brush regardless of their current environmental management capabilities. There is no evidence presented to support the inflammatory language, which is not necessary. The final sentence is unnecessary and unclear.
- CARES recommendation: Replace this paragraph as follows: "*Groundwater data collected as part of this order will assist in determining the existence and magnitude of water quality impacts of dairies, as well as the effectiveness of improved environmental management."*

**Paragraph 25**

- Tentative order states: *Many Dischargers will need to make significant improvements in their facilities to meet these requirements. Some of these improvements (e.g., recycling flush water, grading, establishing setbacks, installing flow meters, exporting manure, leasing or purchasing land, etc.) can be made relatively quickly while some involve infrastructure changes (e.g., new retention ponds, additional piping, tailwater return systems, etc.) that may require more time to implement. The Central Valley Water Board believes it is reasonable to allow Dischargers time to phase in elements of the required Waste Management Plan and Nutrient Management Plan in order to adequately design and construct major infrastructure changes needed to comply with all the requirements of this Order.*
- CARES comment: CARES agrees strongly with the need to allow Dischargers time to phase in elements of the plan. However, this paragraph identifies potential improvements but inaccurately and unnecessarily identifies which may be done "relatively quickly." For example, leasing or purchasing land my be time-consuming or impossible while other solutions identified as requiring more time may actually take less time.

- CARES recommendation: Reword to identify that some practices may take longer than others without identifying which can be done more quickly.

**Paragraph 27**

- Tentative order states: *To be consistent with State Water Resources Control Board Resolution 68-16, Dischargers must employ best practicable treatment or control measures to assure that pollution or nuisance will not occur and the highest water quality consistent with the maximum benefit to the people of the State will be maintained. As noted in Finding 24 above, waste management improvements will be needed at many of the existing milk cow dairies to prevent ongoing adverse water quality effects caused by the generation and disposal of dairy waste. The goal of this Order is to require Dischargers, through monitoring, to first identify the existence, location, and magnitude of adverse water quality impacts and then determine where and what improvements in waste management are needed to prevent ongoing adverse water quality effects. As noted in Finding 25 above, this Order allows Dischargers time to implement the needed improvements in order to achieve best practicable treatment or control measures.*
- CARES comment: This language appears to be both confusing and inconsistent with what the order actually requires. The order actually requires immediate steps to assess the facility and begin proper nutrient management planning. Groundwater monitoring follows and presumably additional management/controls could be required depending on the results of monitoring. Currently, paragraph 27 seems to imply that no positive steps are taken until the results of monitoring are known. This language also identifies the goal of the order as twofold – to "identify" the adverse impacts and then to "determine" where and what waste management steps are needed (missing the all-important actual goal of taking the steps).
- CARES recommendation: Retain the first and last sentences of the paragraph and delete the rest.

**Paragraph 28**

- Tentative order states: *An October 2003 report (Task 2 Report) by Brown, Vence, and Associates concluded that the "…current Title 27 requirements are insufficient to prevent groundwater contamination from confined animal facilities, particularly in vulnerable geologic environments." In particular, the Task 2 Report concluded that the Title 27 requirement for retention ponds to be lined with, or underlain by, soils that contain at least 10 percent clay and not more than 10 percent gravel could result in seepage from a retention pond at a rate as high as 1 x $10^{-3}$ cm/sec or greater.*
- CARES comment: The Brown, Vence and Associates report has not gone through any public review process. CARES strongly disagrees with the conclusions in the report and their characterization here. The permeability noted here refers to lab tests run on graded sands, not those typically found naturally. This much seepage would be an anomaly if it occurred. According to an analysis by CARES

consulting engineers Provost & Pritchard, the seepage rate reported in the BVA report was two to five orders of magnitude (100 to 100,000 times) higher than would be expected in real-world situations.

- CARES recommendation: The comments here appear to be geared toward establishing the inadequacy of the current statutory standard in Title 27. While CARES generally agrees that it is appropriate to adopt a prescriptive standard different than Title 27 for use in determining appropriate designs for new lagoons, it must be done in accordance with the requirements of the Administrative Procedures Act as identified Appendix 1.

**Paragraphs 30-32**

- Tentative order states: These paragraphs discuss proper application of NRCS California Conservation Practice Standard #313 as it pertains to waste storage systems and sets very specific criteria applying the standards.
- CARES comment: Again, it is inappropriate to discuss replacing the Title 27 standard as part of a General Order WDR. However, these paragraphs also appear to go well beyond the NRCS standard to discuss very specific aspects of how the standard would be applied in various situations. While CARES believes it is inappropriate to include this discussion in this general order, we agree that a broader discussion is necessary to develop a Regional Board policy and prescriptive standard for lagoon design, and especially for demonstration that the design and construction are adequate. CARES wishes to go on record as disagreeing with many of the statements in paragraphs 30-32 on a technical basis, but we believe a technical discussion of appropriate design standards and demonstration should take place elsewhere. \

**Paragraph 36**

- Tentative order states: *Farming practices on lands that receive dairy waste contribute salts, nutrients, pesticides, trace elements, sediments and other by-products that can affect the quality of surface water and groundwater. Evaporation and crop transpiration remove water from soils, which can result in an accumulation of salts in the root zone of the soils at levels that retard or inhibit plant growth. Additional amounts of water often are applied to leach the salts below the root zones. The leached salts can reach groundwater or surface water. Even using the most efficient irrigation systems and appropriate fertilizer application rates and timing to correspond to crop needs, irrigation of cropland will have some measurable impact on existing high quality groundwater as a result of the leaching required to protect the crops from salt buildup in the root zone.*
- CARES comment: The exact same impacts described above also occur on farms where dairy waste is not applied; this paragraph gives the inaccurate impression that dairy wastes are the source of the problem rather than the broader implications of irrigated agriculture.

- CARES recommendation: Replace beginning of first sentence with "*Normal commercial farming practices, including those involving dairy manure, contribute …"*

**Paragraph 38**

- Tentative order states: *"The majority of the Dischargers that will be covered under this Order have been operating for many years without a Nutrient Management Plan, which would have minimized the impacts of land applications of dairy waste to surface water and groundwater quality. This Order requires each Discharger to develop and implement a Nutrient Management Plan, which should result in improved water quality by reducing the amount of dairy waste applied to the land application areas.*"
- CARES comment: The last sentence reads in part "**…**reducing the amount of dairy waste applied to the land application areas." This is a blanket assertion or opinion that is not a factual statement and is inappropriate for inclusion in the order in this form.
- CARES recommendation: If the wording were changed to the following; *"…appropriately managing the dairy waste applied to the land application areas"* it would become a more accurate conclusion.

**Paragraph 39**

- Tentative order states: *Consistent with State Water Resources Control Board Resolution 68-16, this Order requires that process wastewater that is applied to land application areas under the Discharger's control and process wastewater that is applied to land application areas under control of a third party: (1) be managed according to a certified Nutrient Management Plan that is consistent with the technical standards specified in Attachment C, and (2) not cause groundwater to exceed the groundwater limitations of this Order.*
- CARES comment: It is inappropriate to use this tentative General Order to regulate land application of process wastewater by a third party. Only land application areas under the Discharger's control should be included. A third party should be regulated separately if the Regional Board determines that such regulation is needed; it should be noted however, that additional regulation of process wastewater is likely to provide a strong disincentive to this use. It is CARES' position that in a first-generation permit, it is appropriate to limit regulation to those lands controlled by the Discharger covered by the general order WDR.
- CARES recommendation: Strike requirements related to management of nutrients on third party lands. The discharger should only be required to document the amount of nutrients that were transferred offsite and the name and address of the recipient. Additional requirements, if necessary, could be determined in future iterations of the WDRs.

**Paragraphs 33 to 39**

The comments above are directed at the specific wording in the finding regarding Resolution 68-16 and its application to Land Application Areas (Findings 33 to 39). The real issue, however, is much larger. Was State Board Resolution 68-16 ever meant to be applicable to farming operations and water use? This has never been considered in any water rights proceedings, so CARES questions why it is be applied here. All farming operations and other types of water use, including urban water use causes water degradation. If farming is considered under 68-16, then it must be recognized in the General Order that the Best Practical Control Technology may be a set of continually changing Best Management Practices (BMPs). CARES is concerned that Resolution 68-16 may not be the most efficient way to regulate, especially if it is to include farming practices.

**Paragraph A12**

- Tentative order states: *"The discharge of storm water to surface water from a land application area where manure or process wastewater has been applied is prohibited unless the manure has been incorporated into the soil and the land application area has been managed consistent with a certified Nutrient Management Plan."*
- CARES comment: Please refer to the discussion of Paragraph 23 above, as the same situation appears here.
- CARES recommendation: The paragraph should be revised by removing the words *"the manure has been incorporated into the soil and."*

**Paragraph B1 (General Specifications)**

- Tentative order states: *The collection, treatment, storage, or disposal of wastes at an existing milk cow dairy shall not result in: (1) discharge of waste constituents in a manner which could cause degradation of surface water or groundwater except as allowed by this Order, (2) contamination or pollution of surface water or groundwater, or (3) a condition of nuisance (as defined by the California Water Code Section 13050).*
- CARES comment: Use of the words "could cause" instead of "causes" leaves the paragraph open to interpretation and creates potential for confusion.
- CARES recommendation: Change "could cause" to "causes."

**Paragraph B6 (General Specifications)**

- Tentative order states: *Dischargers shall reconstruct existing retention ponds in compliance with General Specification B.7 below when groundwater monitoring demonstrates that the existing retention pond has impacted groundwater quality.*
- CARES comment: Reconstruction of existing retention ponds would come at significant cost. Prior to enacting a requirement such as this, the Regional Board should identify improved methods for understanding "when groundwater monitoring demonstrates" that the pond has impacted groundwater quality. It should be made explicit that a simple finding of nitrates in well sample does not necessarily demonstrate a cause-and-effect relationship, particularly in shallow groundwater areas. In addition, this paragraph assumed that the only mitigation

strategy that would be effective is pond reconstruction. Additional mitigation strategies should be identified and considered.

**Paragraph B7-B9 (General Specifications)**

- Tentative order states: *New retention ponds or reconstructed existing ponds, as required in General Specifications B. 5 and B.6 above, shall be designed and constructed to: (1) comply with General Specification B.1 and the groundwater limitations in this Order, (2) have a seepage rate no greater than 1 x $10^{-6}$ cm/sec with no credit for manure sealing, and (3) result in the best practicable treatment or control of the discharge necessary to prevent a condition of pollution or nuisance.* ***Similar language/reference in B8 and B9***
- CARES comment and recommendation: Same as for paragraphs 30-32.

**Paragraph C1 (Land Application Specifications)**

- Tentative order states: *"Land application of all waste from the facility to areas under the Discharger's control shall be conducted in accordance with a certified Nutrient Management Plan consistent with the technical standards for nutrient management as specified in Attachment C. The Nutrient Management Plan shall be modified within 30 days if monitoring shows that discharge from the land application fails to comply with the Groundwater Limitations of this Order or surface water quality objectives or criteria. The modifications must be designed to bring Dischargers into compliance with this Order."*
- CARES comment: Modification of the NMP to respond to inadequacies will likely require significant technical assistance. Resources for this assistance are likely to be limited and already committed to other tasks. More than 30 days time will be necessary to comply with this requirement, should it be necessary.
- CARES recommendation: The paragraph should be revised by changing the deadline to 90 days.

**Paragraph C2 (Land Application Specifications)**

- Tentative order states: *Land application of process wastewater to offsite property under third party control will be regulated by waste discharge requirements to be developed by the Central Valley Water Board. Until such time that the waste discharge requirements are adopted, such land applications shall be conducted: (1) in accordance with a certified Nutrient Management Plan consistent with the technical standards for nutrient management as specified in Attachment C, and (2) under a written formal agreement, which shall be included in the Discharger's Nutrient Management Plan. The Discharger shall include management of such land application areas as part of the Discharger's Nutrient Management Plan (see Contents of a Nutrient Management Plan in Attachment C).*
- CARES comments and recommendations: Same as for Paragraph 39 above – there is no need at this time and in this proposed order to spell out a regulatory plan for third parties, nor is it appropriate to attempt to regulate third-party use of manure nutrients through this general order. It is acceptable to require documentation of the amount of nutrients exported in wastewater delivered to a

third party if such demonstration is needed to show nutrient balance or otherwise is necessary to meet the requirements of the nutrient management plan; however, this documentation should not include a requirement by the dairy operator to document nutrient management on land outside of his control.

**Paragraph C3 (Land Application Specifications)**

- Tentative order states: *The Discharger shall have a written agreement with any third party that has control on the use of solid manure provided by the Discharger. The written agreement with the third party shall be included in the Discharger's Nutrient Management Plan and shall specify plans for the use and management of the third party's land application area. Land application areas under control of a third party that receive solid manure from the Discharger may be regulated under the Conditional Waiver of Waste Discharge Requirements for Discharges from Irrigated Lands (Order No. R5-2006-0053 for Coalition Group or Order No. R5-2006-0054 for Individual Discharger, or updates thereto) if the third party is a participant in a Coalition Group or has an Individual Discharger Waiver.*
- CARES comments: The term "written agreement" is inappropriate as it may convey confusion as to what is "agreed upon." The Discharger should only be required to provide a manifest documenting that solid manure was hauled from the facility and the party to whom the Discharger delivered the manure. The manifest should be kept by the Discharger as a record. It is not appropriate that the manifest "shall specify plans for the use and management of the third party's land application area." There is no environmental benefit of such a statement; meanwhile, such a requirement would act as a disincentive for those wishing to use manure as a fertilizer. The explicit statement that the third party "may" be regulated through a conditional waiver is unnecessary and confusing, particularly if it is made clear that the Discharger need only maintain a record of the manifest.
- CARES recommendation: Rewrite the paragraph to explicitly address the above.

**Paragraph C5a (Land Application Specifications)**

- CARES comment/recommendation: The reference to "H.2.b" should be "H.2.c"

**Paragraph E5 (Provisions)**

- CARES comment/recommendations: The reference to "H.2.c" should be "H.2.a"

**Paragraph E11 (Provisions)**

- Tentative order states: *... At least 90 days before ceasing operations, the Discharger must submit a closure plan that demonstrates proper disposal of all manure, process wastewater, and animal waste impacted soil.*
- CARES comment/recommendations: It should be clarified that "ceasing operations" pertains to ceasing the operation of the manure management system and lagoon, not commercial milking operations.

**Paragraph E11, subsections a through i**

- CARES comments/recommendation: The closure requirements identified here are exceptionally burdensome and overly complex. CARES recommends that this section either be deleted as a requirement or be revised and simplified. CARES recommends that this topic be a subject of discussions between Regional Board staff and stakeholders during workshops prior to adoption of the order.

**Paragraph G3 (Permit Reopening, Revision, Revocation and Re-Issuance)**

- Tentative order states: *The Central Valley Water Board or the Executive Officer may revoke coverage under this Order at any time and require the Discharger to submit a Report of Waste Discharge and obtain individual waste discharge requirements.*
- CARES comment/recommendation: CARES assumes that some effort would be made to show cause for such an action. We suggest that this be revised to indicate that cause must be shown, describing what constitutes cause and what if any recourse a Discharger would have to appeal such an action.

**Paragraph H1 (Required Reports and Notices)**

- Tentative order states: *"Dischargers must submit documentation from a trained professional that no cross connections exist between the waste management system and any water supply or irrigation well that would ensure compliance with Prohibition A.14. A trained professional could be a person certified by the American Backflow Prevention Association, an inspector from a state or local governmental agency who has experience and/or training in backflow prevention, or a consultant with such experience and/or training. Documentation shall be supplied as part of the required Waste Management Plan (Item VI in Attachment B) and in accordance with the Schedule of Tasks in J.1*."
- CARES comment: Structural changes are made quite often during regular maintenance, improvement, and repair of manure management systems. If maintenance, repairs and improvements are difficult to accomplish because of a need to provide *"documentation from a trained professional"* at every turn, compliance with the objectives of the General Order will be jeopardized.
- CARES recommendation: The paragraph should be eliminated since cross-connections are already prohibited.

**Paragraph H2c**

- Tentative order states: *"**Nutrient Management Plan:** A Discharger who applies manure, bedding, or process wastewater, and/or provides process wastewater to a third party for application, to land for nutrient recycling must develop and implement management practices that control nutrient losses and describe these in a Nutrient Management Plan. The Nutrient Management Plan must be certified as specified in Attachment C, maintained at the dairy, submitted to the Executive Officer upon request and must ultimately provide for protection of both surface water and groundwater. Certification that the Nutrient Management Plan has been completed shall be in accordance with the Schedule of Tasks J.1, shall incorporate the elements specified in Attachment C based on a field-specific*

*assessment of the potential for pollutant transport to surface water and groundwater, and shall be submitted to the Executive Officer. The Nutrient Management Plan shall be updated as specified in the Technical Standards for Nutrient Management in Attachment C or if the Executive Officer requests that additional information be included. Groundwater monitoring will be used to determine if implementation of the Nutrient Management Plan is protective of groundwater quality."*

- CARES comment: The discussion of the appropriateness of the requirements in the order regarding third party use of manure and wastewater is presented elsewhere. We do want to call your attention in this paragraph to the term "*bedding."* Please refer to the discussion of Paragraph 13 above.
- CARES recommendation: The paragraph should be modified to be consistent with the changes recommended herein for Paragraph 13 of the General Order.

**Paragraph H2d (Required Reports and Notices)**

- Tentative order states: ***Proposed Interim Facility Modifications****: A Discharger whose Preliminary Dairy Facility Assessment (see Required Reports and Notices H.2.a above) shows that the Whole Farm Nitrogen Balance is greater than 1.5 and/or that the existing retention pond(s) total storage capacity is less than the total storage capacity required shall submit Proposed Interim Facility Modifications as Necessary to Balance Nitrogen and/or Proposed Interim Facility Modifications as Necessary to Improve Storage Capacity, respectively. Such Dischargers shall also submit a Status Report on the Interim Facility Modifications and Documentation of Interim Facility Modifications Completion as Necessary for Storage Capacity and to Balance N.*
- CARES comment: It is CARES position based on the work of Dr. Roland Meyer of UC Davis that the appropriate Whole Farm Nitrogen Balance ratio threshold should be at least 1.65 rather than 1.5. The requirement for a status report on interim facility modifications is unclear.
- CARES recommendations: Change 1.5 to 1.65. State the conditions and/or timeline that would trigger the requirement for the "status report."

**Paragraph H2e (Required Reports and Notices)**

- Tentative order requires: The dairy operators are being asked in the draft tentative General Order to produce a "salinity assessment" of their facility.
- CARES comment: Dairy operators and even expert consultants are unlikely to know where to start on such a report or what the Board staff are looking for. If individual operators produce these reports, CARES feels that the Board is likely to get reports that are meaningless, or do not completely cover all the potential salt sources and transport on the dairy facility, nor where they are best controlled or minimized. This could be an extensive cost to an individual dairy operator. CARES knows, that like other industries in the Valley, the dairy industry must start on such a salt assessment in a rational and systematic manner. CARES is committed to working with the dairy industry and the Board staff to produce such an assessment. It is meaningless, however, at this time to require each operator to

produce such a report. Nor is it useful to put the burden on dairy producers to find a third party to produce such a report. CARES is committed to working to identify potential salt sources, steps that can be taken to minimize or reduce these sources and to educate the dairy operators in how to apply these findings. Salt is probably the most serious long-term water quality problem in the Valley and the dairy industry needs to be part of the solution in the future.

- CARES recommendations: The dairy industry and milk processors all know that salt and salinity are critical concerns long-term for the valley. Along with other industries, the dairy industry needs to take all reasonable and science-based measures to control or minimize salt. The Board needs to stress the importance of this and ask the industry to participate in such an assessment, but outside of the scope of this General Order.

## Appendix 3
CARES Comments on Information Sheet/Tentative G.O. WDRs

**Page 3, paragraphs 3 & 4**

- Information sheet states: *For the purposes of this Order, existing herd size is defined as the number of mature dairy cows reported in the Report of Waste Discharge submitted in response to the 8 August 2005 letter from the Executive Officer, plus or minus 10 percent of that reported number to account for the natural variation in herd sizes … For the purposes of this Order, an increase in the number of mature dairy cows of more than 10 percent beyond the number reported in the Report of Waste Discharge submitted in response to the 8 August 2005 letter from the Executive Officer is considered an expansion.*
- CARES comment/recommendation: In both cases, the 10 percent figure should be converted to 15 percent to be consistent with other parts of the WDRs and to reflect the University of California figures on normal herd variation.

**Page 4, paragraph 4.**

- CARES comment/recommendation: Only soiled or used bedding should be defined as a waste; please to CARES' comments on Paragraph 13 of the General Order.

**Page 5, paragraph 3**

- Information sheet states: *The recent UCCC review of dairy waste recommends that in cropland application of dairy manure, the total nitrogen load of the field should not exceed 1.4 to 1.65 times the potential maximum nitrogen uptake by plants.*
- CARES comment: This is a *significant and serious mischaracterization* of what the UC Committee of Experts actually reported. [0]The UC review stated that *optimum agronomic* application rates with very advanced distribution systems can approach 1.4 (for inorganically farmed systems) to 1.6 (for systems farmed with organic nitrogen forms as are present in manure). Personal communications with the authors have clarified that these numbers are ideal targets to shoot for, but certainly not *maximum* application rates. The UCCE review also notes that application rates of 2.0 to 3.0 can also be appropriate in certain conditions, particularly when amending soils that are depleted of organic matter. It is critical that this information be corrected before the order is adopted as adoption of this statement may perpetuate misuse of these figures by rank-and-file Regional Board enforcement staff and potentially other regulatory agencies.
- CARES recommendation: Revise this paragraph and all other references throughout the Tentative General Order and relevant attachments to characterize 1.65 as a minimum realistic target for N application using dairy manure given very advanced distribution systems. All prohibitions of nutrient application rates higher than 1.65 should be removed from all parts of the Tentative General Order and attachments.

**Page 5, paragraph 4**

- CARES comment/recommendation: The first sentence contains an unnecessarily qualitative phrase, "high concentrations." Recommend it be revised to read: "*Surface water can be degraded or polluted by manure or manure wastewater."* The remainder of the paragraph adequately explains the nature of the pollutants. Concentrations of some pollutants are actually low when compared to synthetic fertilizer.

**Page 6, paragraphs 4 and 5**

- Information sheet states: *The Central Valley Water Board has received documentation of impacts to groundwater quality that indicates the Title 27 minimum standards may not be sufficient to adequately protect groundwater quality at all confined animal facilities in the Region. Adverse impacts to groundwater due to discharges from existing milk cow dairies have been detected in areas where groundwater is as deep as 120 feet below ground surface and in areas underlain by fine-grained sediments …Most of the existing milk cow dairies covered under the General Order have been operating for many years and it is expected that groundwater quality may already be impacted at many of these dairies due to the past operations, including those dairies in compliance with the Title 27 regulations. For example, groundwater samples collected from 425 water supply wells (domestic and agricultural – stock watering and irrigation) on 88 dairies in Tulare County between August 2000 and June 2006 showed that approximately 39% of the wells sampled had nitrate concentrations greater than the maximum contaminant level for drinking water. At least one nitrate polluted well was found at approximately 63% of these dairies.*
- CARES comment: The language in these paragraphs contains an unnecessary amount of bias and conclusory statements. CARES does not agree that all nitrate pollution found in the vicinity of dairies is caused by dairies; nor do we claim that there is no link between dairy nitrogen application and groundwater impacts. It should be enough in this section to state that in many areas of the Central Valley, groundwater monitoring has discovered high nitrate levels both in areas that contain dairies and in many areas that do not. Because dairies produce nitrogen and apply it to land in these areas, steps must be taken to ensure that dairies and other sources of nitrogen are managed to prevent further impacts to groundwater.
- CARES recommendation: Revise or reword this section with an eye toward minimizing conclusory statements and bias.

**Page 7, Paragraph 2**

- CARES recommendation: Revise final sentence to read: *After the first four quarters of data are available from this monitoring, the Executive Officer will phase in requirements to install monitoring wells as needed at a potential of 100 to 200 dairies per year based on an evaluation and prioritization of the threat (or lack of threat) to water quality at each site.*

**Page 8, last Paragraph**

- Info sheet states: "*Compliance with this General Order will reduce impacts to surface water and groundwater from existing milk cow dairies."*
- CARES comment: This statement assumes all dairies are impacting both groundwater and surface water.
- CARES recommendation: "*Compliance with this General Order will reduce or avoid impacts to surface water and groundwater from existing milk cow dairies."*

**Page 14, paragraph 3**

- CARES recommendation: Suggest deletion of the words "large quantities of" in the second sentence.

**Page 17, paragraph 2**

- Info sheet states: *The technical standards for nutrient management require the Discharger to monitor soil, manure, process wastewater, irrigation water, and plant tissue as specified in Monitoring and Reporting Program No. ____. The results of this monitoring are to be used in the development and implementation of the NMP. The NMP requires the Discharger to include land application areas that receive process wastewater from the Discharger's dairy but that are under control of a third party in the Discharger's NMP. Monitoring and Reporting Program No. ___ requires the Discharger to assure that monitoring of irrigation water and soil is conducted for these land application areas that are under a third party's control. This requirement for the Discharger to monitor soil and applications of irrigation water to land application areas under control of a third party and to include these areas in the Discharger's NMP is an interim process. In the future, the Central Valley Water Board expects to place land application areas under third party control under separate waste discharge requirements.*
- CARES comment: As previously stated in our comments on the Tentative General Order, Appendix 2, it is inappropriate to use this proposed order to regulate application of waste to land that the Discharger does not control. The Discharger should only be required to document the amount of nutrients exported and to whom they were transferred; application management responsibility after transfer belongs to the recipient of the wastewater. While the Regional Board may contemplate regulation for the third-party in the future, it is not appropriate to attempt it through this order. Also, doing so may have the unintended effect of discouraging use of manure wastewater on dairy-adjacent croplands. Again, this is a first-generation permit – regulation of third-party recipients of wastewater may be more appropriate in subsequent iterations of the permit if it is indeed deemed necessary.
- CARES recommendation: Revise this section of the info sheet and other relevant sections of the WDRs to eliminate third party nutrient management planning requirements.

**Page 18 (Compliance schedule)**

- CARES comment: CARES generally supports the compliance schedule and commends the Regional Board for recognizing the need to phase compliance in stages for the large number of dairies in the Central Valley to allow the industry and academic institutions time to marshal resources and conduct education and outreach. We understand the California Dairy Quality Assurance Program is working with the Regional Board on possible revisions to the schedule to maximize the program's effectiveness while still meeting the Regional Board's needs; CARES strongly supports this process.

## Appendix 4a

CARES Comments on Monitoring and Reporting Program/Tentative G.O. WDRs

**General comments**

The Monitoring and Reporting Program (MRP) is central to the implementation of the General Order. It encompasses a broad array of activities related to water quality protection and nutrient management, and as such, encompasses many of the economic costs and logistical burdens associated with implementation of the order.

In order for the WDRs as a whole to meet the goals of practical, efficient and cost-effective, it is CARES' position that the MRP must be extensively revised. Rather than providing line-by-line comments on the MRP as it appears in the Tentative Order, we suggest a more productive approach would be for the Regional Board to work with the CARES coalition and technical consultants to identify a blueprint for a revised MRP.

Below, we identify in general terms some of the problems with the current version of the MRP and provide an initial discussion of steps CARES believes are essential for a successful MRP. The CARES technical team is continuing work on a more detailed proposal that we believe will accomplish many of the same goals while posing a significantly reduced burden on dairy operators. We anticipate completing our technical recommendations in approximately the next four weeks. Steps CARES is currently taking include:

- Consulting with our engineers on the most effective monitoring strategies
- Consulting with agronomists on improved and simplified strategies for proper nutrient management
- Consulting with our coalition organizations to ensure that ideas we put forward are fully vetted and have the best chance of successful adoption by dairy operators.
- Conducting detailed "case studies" of two operating dairies to better understand how real commercial dairy operators would implement the MRP, what costs will be and to identify additional strategies to improve the MRP

Upon completion of this process, CARES will provide a detailed technical briefing to the Regional Board with our findings. We will be prepared to brief staff members and the Board itself with more specific recommendations.

**Deficiencies in the Tentative Order MRP as currently written**

In general, the MRP is far too long and complex for it to be successfully implemented by most dairy producers. Many of the requirements appear unlikely to result in useful data or concrete environmental improvements. A sampling of issues identified by the CARES technical team (Provost & Pritchard Engineering Group, Inc./Dellavalle Laboratory, Inc.) included the following:

- Sampling frequency of groundwater irrigation supply wells is excessive.

- Testing of surface irrigation supplies by individual dairy producers is unnecessary and expensive; this data should be obtained from irrigation districts where available.
- Irrigation water use monitoring goes well beyond what is required for all other agricultural operations, even though the implications and impacts to groundwater are similar.
- It is unclear how tile drain monitoring data will be used and whether it would substitute for groundwater monitoring data.
- The factors identified to assess risk include the GWPA area identified by the Department of Pesticide Regulation. This is overly broad and tends to dilute other far more important risk factors, such as Whole Farm Nutrient Balance and implementation of an NMP.
- The MRP calls for testing of agricultural wells even when they are not in use. This poses costs while providing little if any useful information.
- Quarterly sampling in the first year after groundwater monitoring wells are installed is excessive as a blanket requirement and would not provide significantly more useful information to justify the additional cost.
- Sampling collection requirements are generally overly detailed and excessively stringent.
- Plant tissue harvest sample methods as currently outlined present huge expense and logistical problems and fail to recognize real-world issues related to harvest sampling. Again, the requirements are far beyond what is required of non-dairy agricultural operations even though the nutrient management issues are similar.
- The requirement for Total Kjeldahl Nitrogen or TKN is too narrow (allow Automated Dumas Nitrogen, a method used by the University of California and which shows more consistent results).
- It is difficult to estimate the costs of the MRP due to various unknown factors – the "case studies" identified in the general comments above may assist in improving cost estimates.
- As currently written, the MRP and associated parts of the WDR will require more agronomists (the CARES technical team estimated that approximately 160 agronomists might be required to assist dairies in meeting the terms of the MRP) than currently practice in California (CARES estimates that 120 agronomists currently practice in California for <u>all</u> of agriculture).

**<u>Outline for an improved MRP approach</u>**

CARES and its technical team are actively working on detailed technical recommendations and alternatives to the MRP as currently drafted. While this work is not yet complete, we anticipate finalizing our recommendations in the next several weeks. However, we can offer at this time a partial list of principles and ideas we are including in our revised recommendations. Upon completion, we will provide our best estimate of cost impacts associated with these recommendations, which include:

- Sample solid manure twice per year only if applied twice per year

- Sample liquid manure four times annually and reduce parameters analyzed
- Reduce irrigation water sampling frequency
- Reduce testing for unnecessary constituents
- Not all constituents must be analyzed in every sampling event
- Low nitrate in source groundwater should result in less frequent sampling and a low risk assessment for groundwater monitoring wells
- CIMIS water accounting is too complex for a first-generation permit and should be replaced with published Department of Water Resources crop values.
- Soil monitoring should be increased to be useful and effective; if done in conjunction with reduced sampling of other media, the overall program will improve the nutrient management database while reducing overall costs
- Plant tissue monitoring protocols to reduce mid-season sampling except in cases where nutrients applied exceed 1.65 times book values. Harvest samples will provide sufficient data in most cases.
- Simplified plant tissue monitoring protocols will reduce costs without significantly impacting the quality of the data for nutrient management purposes.
- Uncontained stormwater on farms utilizing a nutrient management plan should not be required to conduct individual tests for stormwater runoff if they participate in an irrigated agriculture waiver program. Such participation should serve as a functional equivalent for only the stormwater monitoring requirement (the dairy remains under all other requirements of the WDRs and thus this does not constitute a waiver of WDRs).
- Not all groundwater monitoring wells necessarily need to be tested quarterly. In some cases annual analysis for a limited set of indicator constituents is enough; depending on results, sampling schedules can be increased in frequency if needed.
- Even with significant improvements to the MRP, the ability of the engineering and professional consulting community to meet the needs triggered by the MRP is highly questionable. The Regional Board must take steps to ensure that dairy operators are not harshly penalized in the event professional services are not available in a timely fashion.

**Additional note on 'risk-based' monitoring**

As stated previously, the most important factors in determining the need for groundwater monitoring are whether the dairy operator has implemented a nutrient management plan and whole-farm nutrient balance. The MRP in the tentative order includes a "Table 2" that proposes a point system for assessing risk. CARES believes this table needs further refinement and we suggest the Regional Board give further consideration to the risk table put forward by Dr. Thomas Harter of UC Davis (see Appendix 4b).

| TABLE 2. GROUNDWATER MONITORING FACTORS FOR RANKING PRIORITY[1] | | | | |
|---|---|---|---|---|
| **FACTOR** | **SITE CONDITION** | **WEIGHT SCORE** | **POINT SCORE** | **SCORE** |
| Regional unconfined aquifer hydrogeologic conditions[2] | Anoxic **OR** saline conditions | 0.1 | | |
| | else | 1 | | |
| Annual farm nitrogen balance[3] | < 1.6 | 0.1 | | |
| | 1.6 – 3 | 1 | | |
| | > 3 | 10 | | |
| **PRODUCT OF THE TWO WEIGHT SCORES** | | | | |
| Highest nitrate concentration (nitrate-nitrogen in mg/l) in any existing domestic well, agricultural supply well, or tile drainage system at the dairy or associated land application area (detected two or more times in any one well or tile drainage system). | < 10 | | 0 | |
| | 10 - 20 | | 10 | |
| | >20 | | 20 | |
| Ammonium (ammonium-nitrogen in mg/l) detected twice at any concentration in any existing domestic well, agricultural supply well, or tile drainage system at the dairy or associated land application area. | < 1.5[4] | | 0 | |
| | ≥ 1.5 | | 20 | |
| Location of production area or land application area relative to a Department of Pesticide Groundwater Protection Area[5] (GWPA). | Outside GWPA | | 0 | |
| | In GWPA | | 20 | |
| Distance (feet) of production area or land application area from an artificial recharge area used for drinking water storage[6]. | > 1,500 | | 0 | |
| | 601 to 1,500 | | 10 | |
| | 0 to 600 | | 20 | |
| Nitrate concentration (nitrate-nitrogen in mg/l) in domestic well on property adjacent to the dairy production area or land application area (detected two or more times). | < 10 or unknown | | 0 | |
| | 10 or greater | | 20 | |
| Distance (feet) from dairy production area or land application area and the nearest off-property domestic well. | > 600 | | 0 | |
| | 301 to 600 | | 10 | |
| | 0 to 300 | | 20 | |
| Distance (feet) from dairy production area or land application area and the nearest off-property municipal well. | > 1,500 | | 0 | |
| | 601 to 1,500 | | 10 | |
| | 0 to 600 | | 20 | |
| Nutrient Management Plan completed by 31 December 2008? | Yes | | 0 | |
| | No | | 100 | |
| **SUM OF THE EIGHT POINT SCORES** | | | | |
| **(PRODUCT OF WEIGHT SCORES) x (SUM OF POINT SCORES)** | | | | |

[1] Dairies with higher total scores will be directed to install monitoring wells first.

[2] Based on a map to be generated by RWQCB from existing regional hydrogeologic reports. Would likely include the lakebed areas of Buena Vista Lake, Kern Lake, and Tulare Late.

[3] Farm nitrogen balance =

{0.7 x (N excreted – manure N exported) + fertilizer N + irrigation N + atm. N } / {N removed in crop harvest} with all values reported in [lbs N per year]. Atmospheric N (atm. N) is 15 [lbs/acre] (Blanchard and Tonnessen, 1993; Mutters, 1995). N excretion is a function of the herd composition (U.C. Committee of Consultants, 2005). Farm N balances are computed for the calendar year over the total land application area.

[4] The detection limit for ammonium-nitrogen shall not exceed 1.5 mg/l.

[5] The Department of Pesticide Regulation (DPR) defines a Groundwater Protection Area (GWPA) as an area of land that is vulnerable to the movement of pesticides to groundwater according to either leaching or runoff processes. These areas include areas where the depth to groundwater is 70 feet or less. The DPR GWPAs can be seen on DPRs website at http://www.cdpr.ca.gov/docs/gwp/gwpamaps.htm.

[6] An artificial recharge area for drinking water storage is defined as an area where the addition of water to an aquifer is by human activity, such as putting surface water into dug or constructed spreading basins or injecting water through wells; and where the recharge occurs for the explicit purpose of storing groundwater for later use as drinking water. In general, this does not include wastewater recharge operations.

## Appendix 5
CARES Comments on Standard Provisions and Reporting Requirements/Tentative G.O. WDRs

**Paragraph C3**

- SPRR states: *To assume operation under the Order, any succeeding owner or operator must request, in writing, that the Executive Officer transfer coverage under the Order. The request must contain the requesting entity's full legal name, address and telephone number of the persons responsible for contact with the Central Valley Water Board and a responsibility statement. The statement shall comply with the signatory paragraph of the General Reporting Requirement C.7 below and state that the new owner or operator assumes full responsibility for compliance with the Order and that the new owner or operator will implement the Waste Management Plan and the NMP prepared by the preceding owner or operator. Transfer of the Order shall be approved or disapproved in writing by the Executive Officer. The succeeding owner or operator is not authorized to discharge under the Order and is subject to enforcement until written approval of the coverage transfer from the Executive Officer.*
- CARES comment: Some dairies are sold with cows included and never cease operations. CARES believes the intent of this paragraph is to allow operation under the existing WDR until transfer takes place.
- CARES recommendation: The Regional Board should clarify this paragraph to indicate how long the Executive Officer has to issue written approval. It may be unreasonable to prohibit discharge for an indefinite period pending approval of the order. So long as the applicant applies for coverage within a reasonable period before ownership transfer, say no less than 30 days before transfer, and agrees to implement the existing Waste Management Plan and NMP with no significant changes to the operation, coverage should be deemed temporary but automatic at the time of transfer if the Executive Officer has not yet issued a decision.

**Paragraph C10e**

- CARES comment/recommendation: Change "10 percent" to "15 percent" for consistency throughout the General Order and attachments.

**Paragraph D4**

- SPRR states: *All instruments and devices used by the Discharger for the monitoring program shall be properly maintained and shall be calibrated at least yearly to ensure their continued accuracy.*
- CARES comment/recommendation: Suggest "at least yearly" be revised to "as needed."

**Paragraph E1**

- SPRR states: *California Water Code Section 13350 provides that any person who violates WDRs or a provision of the California Water Code is subject to civil liability of up to $5,000 per day or $15,000 per day of violation, or when the violation involves the discharge of pollutants, is subject to civil liability of up to*

*$10 per gallon, or $20 per gallon; or some combination thereof, depending on the violation, or upon the combination of violations. In addition, there are a number of other enforcement provisions that may apply to violation of the Order.*

- CARES comment: As previously stated, this is a complex first-generation permit. This paragraph discusses only harsh penalties and strict enforcement, Good-faith efforts to implement the requirements of the WDR should be met with compliance assistance and flexibility where appropriate.
- CARES recommendation: CARES suggests the inclusion of language explicitly stating that the goal of the Regional Board is to improve environmental performance of dairies and assist in reaching compliance on a reasonable schedule – not to generate harsh enforcement measures. Strict enforcement should be reserved for those Dischargers not making a good faith effort to comply with the permit and should not be a first resort.

## Appendix 6a

CARES Comments on Existing Conditions Report/Attachment A of Tentative G.O. WDRs

**General comments on form**

- We suggest additional space be provided on both pages 1 and 2 of the Attachment A form for Assessor's Parcel Number identifications
- Under Section F on page 3, we suggest combining the chemical use categories to remove "soaps" and "disinfectants," revising "footbaths" to "footbath materials" and adding "cleaning materials."
- Revise the second question on page 3, paragraph A, as follows: "Has your dairy at its current location expanded by more than 15 percent in herd size since October 17, 2005?"
- Page 3 Section G calls for a 7.5 minute USGS map. A map of this scale is not large enough to provide sufficient detail as requested, such as surface water features. Recommend revision to requesting a topographic map of sufficient detail to clearly identify the requested operational and geographical features.

**Comments on the online form**

The online "Preliminary Dairy Facility Assessment" (hereafter "PDFA") referenced in the General Order is fundamentally flawed. It is too complex and includes values that tend to result in overly conservative calculations. Examples of overly conservative calculations include:

- The spreadsheet asks for water flows through sprinklers; minor estimation efforts can lead to very large inaccuracies in the results.
- If a dairy producer leaves a data point blank, the program uses a predetermined value that also tends to overestimate water usage.
- The spreadsheet calculations overestimate both solid and liquid manure production, and underestimate appropriate fertilizer application rates for cropland.

With the assistance of Provost & Pritchard Engineering Group, Inc., CARES is providing (**see Appendix 6b**) an early draft of a possible alternative spreadsheet. This draft is intended to demonstrate the general concept but requires additional revisions before it can be used. Once finished, we believe this version should be easier for dairy producers to fill out, relies on information to which dairy producers have better access, and will ultimately produce more accurate results. We are currently "test-driving" this alternative spreadsheet with our producer groups and will revise and submit as soon as practicable.